



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,576	05/15/2002	Joerg Heyse	10191/2191	9233
26646	7590	02/18/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			HWU, DAVIS D	
			ART UNIT	PAPER NUMBER
			3752	

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/030,576

Applicant(s)

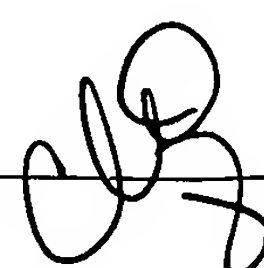
HEYSE, JOERG

Examiner

Davis Hwu

Art Unit

3752



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on 08 January 2002.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 15-27 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 15-19 and 23-27 is/are rejected.

7) ☒ Claim(s) 20-22 is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some \* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-19 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nally et al. in view of Stringfellow.

The patent to Nally et al. discloses a fuel injector for a fuel injection system of an internal combustion engine, the injector comprising:

- an energizable actuating element 48;
- a rigid valve seat element 40;
- a rigid valve seat provided on the valve seat element (see Figure 1);
- a valve closing element comprising armature 22 connected to needle 24 that is axially movable along a valve longitudinal axis and that works in conjunction with the rigid valve seat so as to open and close a valve, wherein;
- at least one outlet opening is provided downstream from the rigid valve seat, wherein;
- the opening movement of the valve closing element is directed away from the at least one outlet opening, a closing movement of the valve closing element is directed toward the at least one outlet opening, and the valve closing

Art Unit: 3752

element has an inner through hole through which a fuel flows in a direction that is opposite to the opening movement of the valve closing element;

- a needle sleeve 38 as recited in claim 19.

Nally et al. do not disclose the movement of the valve closing element being fuel-pressure assisted. The patent to Stringfellow teaches a fuel injector comprising an energizable actuating element 44, a valve seat, and a valve closing element which is opened by the combination of element 44 and high pressure fuel through inlet 18. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Nally et al. by providing high pressure fuel to assist opening the valve closing element as taught by Stringfellow. The shape of the valve closing element and valve seat element of claims 18, 24, 26, and 27 would have been an obvious matters of design choice, since such a modification would have involved a mere change in the shape of a component which generally recognized as being within the level of ordinary skill in the art.

### ***Allowable Subject Matter***

3. Claim 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Wakeman, Peters et al., Hulsing, Zdyb et al., and Cowell et al. are pertinent to Applicant's invention.

Art Unit: 3752

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis Hwu whose telephone number is 703-305-1663.

The examiner can normally be reached on M-F 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Y. Mar can be reached on (703)308-2087. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.



Davis Hwu